Amendments to the Claims

This listing of claims supersedes all listing of claims.

1. (Previously Amended) A method of conducting a wireless inventory of items using a network tag reader and tags, wherein a unique tag is attached to each item and each tag is permanently assigned a tag identification number (Tag ID), the method comprising the steps of:

selecting one of a plurality of remote access sensor modules, which communicate wirelessly with the items, wherein the selected remote access sensor module comprises a coverage pattern that defines a physical area containing a plurality of items with their associated tags;

interrogating the tags in a defined physical area through the corresponding selected remote access sensor module, thereby receiving information from the tags in the defined physical area;

storing the information received in the interrogating step in an inventory database;

repeating the selecting, interrogating, and storing steps for each remote access sensor module; and

after the selecting, interrogating, and storing steps are performed for each remote access sensor module, processing the information in the inventory database, wherein the interrogating step comprises the steps of:

at the network tag reader,

transmitting through the selected remote access sensor module a wake-up signal followed by a first clock signal;

at each tag within the physical area defined by the coverage pattern of the selected remote access sensor module,

incrementing a first tag count in response to the first clock signal, and

transmitting the Tag ID assigned to each tag when the Tag ID of each tag corresponds to the first tag count;

at the network tag reader,

incrementing a first reader count in response to the first clock signal,

storing a given first reader count when more than one tag responds to the first clock signal that corresponds to the given first reader count, and

transmitting through the selected remote access sensor module the given first reader count followed by a second clock signal; and

at each tag that responds to the transmitted given first reader count,

incrementing a second tag count in response to the second clock signal, and

transmitting a second number assigned to each tag when the second number of each tag corresponds to the second count .

2. (Previously presented) The method of claim 1, wherein the information received in the interrogating step comprises at least one Tag ID, each Tag ID corresponding to a tag within the physical area defined by the coverage pattern.

3. (Previously presented) The method of claim 2, further comprising the step of repeating the selecting, interrogating, storing, repeating, and processing steps.

4. (Previously presented) The method of claim 3, wherein the storing step comprises the step of:

if a particular Tag ID received during an initial performance of the interrogating step has not been received during a subsequent performance of the interrogating step within a predetermined time period, storing information in the inventory database that indicates a tag corresponding to the particular Tag ID is missing.

5. (Previously presented) The method of claim 4, wherein the processing step comprises the step of initiating a security action when the particular Tag ID is missing.

6. (Currently Amended) The method of claim 5, wherein the security action comprises at least one of turning on a surveillance camera or activating a silent alarm.

7. (Canceled)

8. (Previously presented) The method of claim 2, wherein the processing step comprises the step of correlating a remote access sensor module identity with each Tag ID received in the interrogating step to maintain data regarding the location of each tag corresponding to a Tag ID.

9. (Previously presented) The method of claim 1, wherein the information received in the interrogating step comprises sensor information originated by a sensor associated with a tag within the physical area defined by the coverage pattern.

10. (Currently Amended) The method of claim 9, wherein the sensor information indicates at lease one of tag movement, ~~and/or~~ vibration, or temperature.

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Original) The method of claim 1, wherein the network tag reader is connected to each of the plurality of remote access sensor modules through an electrical power distribution system.

16. (Previously Canceled).

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Canceled)

23. (Canceled)

24. (Canceled)

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Canceled)

30. (Canceled)

31. (Canceled)

32. (Canceled)

33. (Canceled)

34. (Canceled)

35. (Canceled)

36. (Canceled)

37. (Previously presented) The method of claim 1, further including the step of performing multiple reads of the tags by the network tag reader to avoid time slot contention, wherein the tag identification number includes a plurality of bits, wherein a tag responds to the network tag reader with a first plurality of the plurality of bits during a first read and a second plurality of the plurality of bits during a second read.

38. (Canceled)

39. (New) A method of conducting a wireless inventory of items in a distributed tag reader network, wherein a tag is attached to each item, and wherein each tag is assigned a plurality of identification numbers, the method comprising the steps of:

selecting at least one remote access sensor module from a plurality of remote access sensor modules in the distributed tag reader network, wherein each remote

access sensor module communicates wirelessly with the tags, and each remote access sensor module has a coverage pattern that defines a physical area;

transmitting, through the at least one selected remote access sensor module, an interrogation signal to one or more tags, wherein the one or more tags are within the physical area defined by the coverage pattern of the at least one selected remote access sensor, and wherein each tag is configured to receive the interrogation signal, evaluate one or more of its plurality of identification numbers, and reply to the interrogation signal, if appropriate;

resolving contention between multiple tags that responded to the interrogation signal, if appropriate;

identifying which tags are within the coverage area of the at least one selected remote access module; and

maintaining a record of each tag that was identified.

40. (New) The method of claim 39, wherein each reply received comprises at least one of the identification numbers assigned to the tag that responded to the interrogation signal.

41. (New) The method of claim 40, further comprising the step of associating the at least one of the identification numbers assigned to the tag that responded to the interrogation signal with at least one of the selected remote access sensors to maintain data regarding a location of the tag.

42. (New) The method of claim 39 further comprising the step of repeating the steps of selecting, transmitting, resolving, identifying, and maintaining for each remote access sensor module in the distributed tag reader network.

43. (New) The method of claim 42, wherein each reply received comprises at least one of the identification numbers assigned to the tag that responded to the interrogation signal, and further comprising, if a particular identification number received in response to an initial performance of the transmitting step has not been received during

a subsequent performance of the transmitting step within a predetermined time period, storing information that indicates a tag corresponding to the particular identification number is missing.

44. (New) The method of claim 43, further comprising initiating a security action when the tag corresponding to the particular identification number is missing.

45. (New) The method of claim 44, wherein the security action comprises turning on a surveillance camera or activating a silent alarm.

46. (New) The method of claim 39, wherein each reply received comprises sensor information originated by a sensor associated with the tag that responded to the interrogation signal.

47. (New) The method of claim 46, wherein the sensor information indicates at least one of the following: tag movement, tag vibration, or tag temperature.

48. (New) The method of claim 46, further comprising analyzing the sensor information for a condition that indicates a security breach.

49. (New) The method of claim 48, wherein the condition that indicates a security breach comprises a temperature fluctuation, a movement or a sudden vibration.

51. (New) The method of claim 39, wherein the coverage patterns of each of the plurality of remote access sensor modules are physically isolated from each other.

52. (New) The method of claim 39, wherein at least two of the coverage patterns of the plurality of remote access sensor modules overlap each other.

53. (New) The method of claim 39, wherein the step of resolving contention comprises performing multiple reads on the multiple tags that responded to the interrogation signal in a same time slot by transmitting at least a second interrogation signal to the multiple tags that responded to the interrogation signal in a same time slot, wherein at least one identification number assigned to a tag includes a plurality of bits, and wherein the multiple tags that responded to the interrogation signal in the same time slot responded to the interrogation signal with a first plurality of the plurality of bits during a first read, and will respond to the second interrogation signal with a second plurality of the plurality of bits during a second read.

54. (New) A distributed tag reader network used to conduct a wireless inventory of items, wherein a tag is attached to each item, and wherein each tag is assigned a plurality of identification numbers, and each tag is configured to receive and transmit signals, the distributed tag reader network comprising:

a network reader, comprising a database; and

a plurality of remote access sensor modules coupled to the network reader, wherein each remote access sensor module has a coverage pattern that defines a physical area, and communicates wirelessly with the tags,

wherein the network reader selects at least one remote access sensor module from the plurality of remote access sensor modules in the distributed tag reader network; and transmits, through the at least one selected remote access sensor module, an interrogation signal to one or more tags, wherein the one or more tags are within the physical area defined by the coverage pattern of the at least one selected remote access sensor, and wherein each tag is configured to receive the interrogation signal, evaluate one or more of its plurality of identification numbers, and reply to the interrogation signal, if appropriate;

wherein the network reader or the at least one selected remote access sensor module resolves contention between multiple tags that responded to the interrogation signal; and identifies which tags are within the coverage area of the selected remote access module; and

wherein the network reader maintains a record of each tag that was identified in its database.

55. (New) The distributed tag reader network of claim 54 further comprising a computer system coupled to the network reader, and wherein the network reader selects at least one remote access sensor module from a plurality of remote access sensor modules in the distributed tag reader network in response to an instruction received from the computer system.

56. (New) The distributed tag reader network of claim 54 further comprising a computer system coupled to the network reader on a permanent basis via a wired connection.

57. (New) The distributed tag reader network of claim 54 further comprising a computer system coupled to the network reader on an intermittent basis via a wireless connection.

58. (New) The distributed tag reader network of claim 54 further comprising a computer system, wherein the network reader is a Personal Computer Memory Card International Association (PCMCIA) card that fits into a PCMCIA card slot on the computer system.

59. (New) The distributed tag reader network of claim 58 wherein the computer system is a portable device.

60. (New) The distributed tag reader network of claim 54 further comprising a computer system, coupled to the network reader, that is capable of controlling the performance of the network reader.

61. (New) The distributed tag reader network of claim 54 further comprising a computer system coupled to the network reader, and wherein the computer system is a desktop computer, a workstation, a personal digital assistant, dedicated hardware, dedicated firmware or dedicated software.

62. (New) The distributed tag reader network of claim 54 further comprising a sensor information module, coupled to the network reader and to the plurality of remote access sensor modules, configured to facilitate an exchange of information between the reader network, the plurality of remote access sensor modules and the plurality of tags.

63. (New) The distributed tag reader network of claim 54, wherein the network tag reader is connected to each of the plurality of remote access sensor modules through an electrical power distribution system.

64. (New) The distributed tag reader network of claim 54, wherein at least one of the remote access sensor modules is a Personal Computer Memory Card International Association (PCMCIA) card.

65. (New) The distributed tag reader network of claim 54, wherein at least one of the remote access sensor modules attaches to an electrical lighting fixture.